

POST LEVELING ASSEMBLY AND METHOD OF USING SAME

BACKGROUND OF THE INVENTION

TECHNICAL FIELD

5 This invention generally relates to a post leveling assembly. More particularly, the invention relates to a device for leveling vertical posts for vinyl fences or decks. Specifically, the invention relates to a device that is fixed to the inner core of a post and that has a pivoting arm that aligns with a marker to enable the installer to visually determine whether the post is vertical or not.

BACKGROUND INFORMATION

10 One of the problems experienced when installing either a fence or deck is that, in order for the structure to be both aesthetically pleasing and structurally sound, the fence or deck posts must be installed so that they are vertical. This can be achieved by the installer using a common liquid leveling device. The device is held against the post until an air bubble trapped in the liquid within the level falls within a marked range. The use of this device does, however, produce a problem for the installer inasmuch as he needs both hands to install the post but must, at the same time, use one of his hands to hold the level against the post.

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There is therefore a need in the art to provide a leveling device that allows the installer to vertically align a fence or deck post without unnecessarily occupying one of their hands to hold the leveling device in place.

SUMMARY OF THE INVENTION

The device of the present invention is a post leveling assembly that is fixed to the post to be installed. The device includes a base that has an arm that is able to swing about a pivot point. The arm includes an indicator that aligns with a marker on the base to show when the post is vertical. If the indicator on the pivoting arm is not aligned with the marker on the base, then the post is not vertical.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred embodiments of the invention, illustrative of the best mode in which applicant has contemplated applying the principles, are set forth in the following description and are shown in the drawings and are particularly and distinctly pointed out and set forth in the appended claims.

Fig. 1 is a perspective view of a vertical post on a deck;

Fig. 2 is an exploded perspective view of the post leveling assembly in accordance with the present invention;

Fig. 3 is a perspective view of the post leveling assembly;

Fig. 4 is a top view of the post leveling assembly;

Fig. 5 is a side view of the post leveling assembly;

Fig. 6 is a front view of a metal core for a deck-post, with the post leveling assembly being mounted on the core and the core being off-center and tilted to the left;

Fig. 6a is an enlarged front view of the post leveling assembly shown in Fig. 6;

Fig. 7 is a front view of a metal core for a deck-post, with the post leveling assembly being mounted on the core and the core being off-center and tilted to the right;

Fig. 7a is an enlarged front view of the post leveling assembly shown in Fig. 7;

Fig. 8 is front view of a metal core for a deck-post, with the core being centered;

Fig. 8a is an enlarged front view of the post leveling assembly shown in Fig. 8.

Fig. 9 is a partial cross-sectional front view a centered core with the post leveling assembly mounted thereon and with the vinyl sleeve mounted over it;

Fig. 10 is a partial cross-sectional side view of the centered core of Fig. 9, showing a centered core with the post leveling assembly mounted thereon and a vinyl sleeve mounted over it.

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DETAILED DESCRIPTION OF THE INVENTION

Referring to Figs.1-6, there is shown a portion of a deck 10 that includes a post 12. Post 12 is mounted on deck boards 14 that are in turn supported on a joist 16. Horizontal rails 18, 20 are connected to post 12 and a plurality of balusters 22 are positioned at intervals between rails 18, 20. A cap 24 is positioned at the top of post 12 and a foot 26 is positioned about the base of post 12.

The preferred embodiment of the invention is designed to be preferably used in the installation of vinyl fences and decks. Vinyl fences and decks have posts 12 that are made up from a number of components. A core 28 (Fig. 6), usually made from metal, is connected to boards 14 in a conventional manner. A spacer 30, generally made of metal, is provided near the bottom of core 28 and a second spacer 32, generally made of metal, is provided near or at the top of core 28. A vinyl sleeve 31 (Fig. 9) is slipped over the metal core 28. A foot 26, generally made of vinyl, is slipped around sleeve 31 and brought into engagement with boards 14. Cap 24 26, generally

made of vinyl, is slipped over the upper end end 31a of sleeve 31 (Fig.9). It will be understood by those skilled in the art that while the present invention is useful for aligning posts for vinyl fences and decks, it may be used in conjunction with other types of materials without departing from the spirit of the invention.

Referring specifically to Figs. 2-5, there is shown a post leveling assembly, generally referred to by the number 34. Assembly 34 includes an L-shaped base 36 having two legs 36a, 36b having an outer surface 38, an inner surface 40, a top edge 42, a bottom edge 44 and side edges 46, 48. Base 36 is configured to engage the outer corner and walls 52a, 52b (see Figs. 9 &10) of a substantially square or rectangular core 28. The legs 36a, 36b of base 36 are disposed generally at 90 degrees to each other. Each leg 36a, 36b includes an aperture 54 (Fig. 4) proximate top edge 42. Apertures 54 may extend from outer surface 38 through to inner surface 40 or may extend only part of the way from outer surface 38 toward inner surface 40. A support 56 is installed into each aperture 54 and a pin 58 secures an arm 60 to each support 56. When arm 60 is pivotally connected to support 56, it is able to swing freely as base 36 moves with core 28. The lower end 60a of arm 60 is V-shaped so that its apex 62 points to the apex 64 of a raised detent or marker 66 disposed proximate the bottom edge 44 of front surface 38 of base 36. While marker 66 is shown as extending outwardly from front

surface 38, it will be obvious to those skilled in the art that indicators such as grooves or raised lines or inked lines, diamond or triangular shapes could also be used without departing from the scope of the present invention.

Base 36 is fixed to core 28 by any suitable means (not shown). This may include adhesives, screws, rivets etc. As may be seen from Figs. 6 and 6a, when core 28 is positioned to the left of vertical (indicated by the line V V'), arm 60 swings to the left of marker 66. The apex 62 of arm 60 is then positioned to the left of apex 64 of marker 66, thereby indicating that core 28 is not vertical. In order to bring core 28 into vertical alignment, the top 28a of core 28 must be moved slightly to the right in the direction of arrow A (Fig. 6). Similarly, as is shown in Figs. 7 and 7a, when core 28 is positioned to the right of vertical (indicated by the line V V'), arm 60 swings to the right of marker 66. The apex 62 of arm 60 is then positioned to the right of apex 64 of marker 66, thereby indicating that core 28 is not vertical. In order to bring core 28 into vertical alignment, the top 28a of core 28 must be moved to the left in the direction of arrow B (Fig. 7). When core 28 is vertical, as is shown in Figs. 8 and 8a, by the line V V', the apex 62 of arm 60 points directly to the apex 64 of marker 66. Therefore, it is easy for the installer to see if core 28 is vertical or not. If core 28 is not vertical, the installer need only move core 28 to the left or right, as is indicated by arrows C and D in Fig. 8, so that the apex 62 of arm 60 points directly to the apex 64 of marker 66. Because base

36 is secured to core 28, the installer can use both hands to mount the core on boards 14 and can easily and quickly detect visually whether or not the core 28 is being installed vertically. As may be seen from Figs. 9 and 10, when core 28 is vertical, the apex 62 of each arm 60 on each leg 36a, 36b points directly at the apex 64 of the corresponding marker 66.

While it has been disclosed that arm 60 has an V-shaped end with an apex 62, it will be understood by those skilled in the art that arm 60 may instead be provided with a line, ridge, groove, symbol or other indicator to be referenced relative to apex 64 and thereby indicate whether or not the core 28 is vertical without departing from the scope of the present invention.

Once the core 28 is vertical and has been secured by commonly known means to boards 14, or in the ground in the case of a fence post, the sleeve 31 is slipped over core 28. Spacers 30, 32 provide support for sleeve 31. The foot 26 is slipped over sleeve 31 and then cap 24 is placed over the upper end of sleeve 31. It should be noted that while the assembly 34 may be removed from core 28 after ensuring it is vertical, it is not necessary to do so and is preferable to leave assembly 34 mounted to core 28 on a permanent basis in case later realignment is needed.

In order to make it easier for the installer to quickly and easily see if the apex 62 of arm 60 is pointing directly at the apex 64 of marker 66, it is preferable to make the base 36 in one color and the front surface of marker

66 and arm 60 in a strongly contrasting second color. A good combination of colors is yellow for the base 36 and black for the arm 60 and front face of the marker 66.

Vinyl fence and deck posts can be installed vertically by attaching post leveling assembly 34 to the core 28 of post 12. The bottom 28b of core 28 is then placed in the location for installation of the post. The top 28a of core 28 is moved to the left or right until apex 62 of arm 60 aligns with the apex 64 of marker 66. Core 28 is then fixed into position. The sleeve 31 is then slipped over core 28 and cap 24 is clipped over sleeve 31.

While the post leveling assembly 34 has been disclosed as including a base 36 onto which the support 56, arm 60 and marker 66 are mounted, it is also possible for a support 56, arm 60 and marker 66 to be mounted directly onto two adjacent sides of the core 28 of post 12. (This scenario has not been illustrated in the drawings.) In this instance, when the post 12 is to be installed, the installer can manipulate the core 28 in the manner previously described until the apex 62 of arm 60 aligns with the apex 64 of marker 66. Core 28 is then fixed into position and sleeve 31 and cap 24 are slipped over core 28.

In the foregoing description, certain terms have been used for brevity, clearness, and understanding. No unnecessary limitations are to be implied

therefrom beyond the requirement of the prior art because such terms are used for descriptive purposes and are intended to be broadly construed.

Moreover, the description and illustration of the invention is an example and the invention is not limited to the exact details shown or described.